Docket: 02560034aa (USSN 09/633,122)

1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In repatent application of

Rappaport

Confirmation No. 1149

Serial No. 09/633,122

Group Art Unit 2123

Filed August 4, 2000

Examiner Ayal Sharon

For

METHOD AND SYSTEM FOR DESIGNING OR DEPLOYING A COMMUNICATIONS NETWORK WHICH ALLOWS SIMULTANEOUS SELECTION OF MULTIPLE COMPONENTS

Box Non-Fee Amendment Commissioner for Patents PO Box 1450 Alexandria, Virginia 22313-1450

Facsimile Transmission of Copies of Pages of Applicant File VIA FACSIMILE ON JANUARY 13, 2005 TO 571-273-3714

Sir:

Pursuant to our telephone call today, attached are copies of the following from the file for the Applicant as maintained by the undersigned.

- 1) A copy of the action mailed by the USPTO September 16, 2004
- 2) A copy of the front page of the Response to Requirement for Information filed October 12, 2004
- 3) A copy of the date stamped receipt showing the Response to Requirement for Information was filed simultaneously with a Re-Submission of Amendment.

Respectfully submitted,

Michael E. Whitham Reg. No. 32,635

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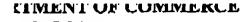
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PPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO
09/633,122	08/04/2000	Theodore Rappaport	02560034aa	1149
30743 75	90 09/16/2004		EXAM	INER
WHITHAM,	CURTIS & CHRISTOF	FERSON, P.C.	SHARON	AYAL I
11491 SUNSET SUITE 340	HILLS ROAD		ART UNIT	PAPER NUMBER
RESTON, VA	20190		2123	*
			DATE MAILED: 09/16/200	4

Please find below and/or attached an Office communication concerning this application or proceeding.

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U.S. Patent and Trademark Office Address: COMMISSIONER FOR PATENTS

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Alexandria, Virginia 22313-1450

APPLICATION NO.J CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR / PATENT IN REEXAMINATION		ATTORNEY DOCKET NO.
			·	
				EXAMINER
			ART UNIT	PAPER
			,	9

DATE MAILED:

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner for Patents

The reply filed on 06/14/2004 is not fully responsive to the prior Office Action because of the following omission(s) or matter(s): The response does not address the 37 CFR 1.105 Requirement for Information that accompanied the Office Action. See 37 CFR 1.111.

The USPTO's internal records show that the Requirement for Information ("Rule 105") was mailed on the same date as the Office Action, 03/15/2004. In a telephone conversation conducted on 08/10/2004, Carrie Atkins, assistant to Applicant's Representative Mr. Michael Whitham, Reg. No.32,635 said that the 1.105 and other attachments were not received with the Office Action. All of the documents mailed on 03/15/2004 (with the exception of the prior art cited in the 892 form - which was addressed by the Applicant in the above-mentioned reply) are therefore being re-mailed with this notice.

Since the above-mentioned reply appears to be bona fide, applicant is given ONE (1) MONTH or THIRTY (30) DAYS from the mailing date of this notice, whichever is longer, within which to supply the omission or correction in order to avoid abandonment. EXTENSIONS OF THIS TIME PERIOD MAY BE GRANTED UNDER 37 CFR 1.136(a).

		Applicat	lon No.	Applicant(s)	
		09/633.1	22	RAPPAPORT ET	AL.
	Office Action Summary	Examine	r	Art Unit	
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A SHO THE N - Exten after: - If the - If NO - Fattur Any re	DRTENED STATUTORY PERIOD IN MAILING DATE OF THIS COMMUNISIONS of time may be available under the provision SIX (6) MONTHS from the mailing date of this comperiod (or reply specified above is less than thirty (period for reply is specified above, the maximum are to reply within the set or extended period for reply received by the Office later than three months of patent term adjustment. Sec 37 CFR 1.704(b).	IICATION. s of 37 CFR 1.136(a). In no e munication. 30) days, a reply within the sta statutory period will apply and o y will, by statute, cause the ap	vent, however, may a reply be tin statory minimum of thirty (30) day will expire SIX (6) MONTHS from plication to become ABANDONE	nely filed s will be considered time the mailing date of this of D (35 U.S.C. § 133).	ily. communication.
Status					
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·	•	2b) This action is			
, _	Since this application is in condition closed in accordance with the practice				e merits is
Dispositi	on of Claims	•			
5)□ 6)⊠ 7)□	Claim(s) <u>1-15</u> is/are pending in the 4a) Of the above claim(s) is/are allowed. Claim(s) <u>1-15</u> is/are rejected. Claim(s) <u>1-15</u> is/are objected to. Claim(s) is/are subject to restr	are withdrawn from co			
Application	on Papers				
10)	The specification is objected to by the drawing(s) filed on is/are Applicant may not request that any objected Replacement drawing sheet(s) including the oath or declaration is objected.	e: a) accepted or bection to the drawing(s) g the correction is requi	be held in abeyance. Se ired if the drawing(s) is ob	e 37 CFR 1.85(a). jected to. See 37 C	• •
Priority u	nder 35 U.S.C. § 119				
12) <u></u>	Acknowledgment is made of a claim All b) Some * c) None of: 1. Certified copies of the priority 2. Certified copies of the priority 3. Copies of the certified copies application from the Internation see the attached detailed Office actions.	y documents have be y documents have be s of the priority documental onal Bureau (PCT Ru	en received. en received in Applicat tents have been receive tie 17.2(a)).	ion No ed in this Nationa	l Stage
Attachment	i(5) e of References Cited (PTO-892)		4) Interview Summary	· (₱TO-413)	
2) Notice 3) Inform	e of Draftsperson's Palent Drawing Review (nation Disclosure Statement(s) (PTO-1449 of No(s)/Mail Date 3.4.5.		Peper No(s)/Mail D 5) Notice of Informal F 6) Other: مراد المحرب المحرب	ate Patent Application (PT	0-152) 5 37 CFR 1,105

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DETAILED ACTION

Introduction

1. Claims 1-15 of U.S. Application 09/633,122 filed on 08/04/2000 are presented for examination.

Claim Rejections - 35 USC § 102

- 2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:
 - A person shall be entitled to a patent unless -
 - (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
- 3. Claims 1-5, 7-11, and 13-15 are rejected under 35 U.S.C. 102(b) based upon a public use or sale of the invention.
- 4. The "SMT Plus" product, later renamed as "SitePlanner", was on sale more than one year prior to the date of application of patent in the U.S.
- 5. The prior art used for these rejections is as follows:
 - a. "SMT Plus: Site Modeling Tool. A Software Tool for Planning Indoor
 Wireless Systems." © 2001. Printed from
 http://www.mprg.org/research/smt/smt.shtml on 3/5/04. (Referred to in this document as "SMT Plus").

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- b. Rappaport, T., et al. <u>SitePlanner ™ 3.0 User's Manual.</u> Wireless Valley Communications. © 1998. (Referred to in this document as "SitePlanner 3.0").
- c. "Wireless Research Leads to Indoor Planning Tool." <u>EE Connection</u>, Feb. 1997. Printed from http://www.ecpe.vt.edu/ecenews/feb97/smt.html on 3/5/04. (Referred to in this document as "EE Connection").
- d. "Communication Products Special Section." <u>EDN Access.</u>, Aug. 1, 1996.

 Printed from http://www.e-
 http://www.e-
 insite.net/ednmag/archives/1996/080196/16df1.htm on 3/5/04. (Referred to in this document as "EDN Access").
- 6. The first page of the SMT Plus document contains the following quotation:

SMT Plus was developed at MPRG in the early 1990s from years of indoor/microcell propagation research at Virginia Tech. It is an early research predecessor to SitePlanner™ Tool Suite, the powerful commercial indoor/microcellular prediction & measurement system developed by Wireless Valley Communications, Inc. Please visit the Wireless Valley Communications, Inc. website to learn about the full capabilities of this powerful indoor/microcellular engineering and system management tool suite.

7. The EE Connection document, dated February 1997, teaches the following:

Research on indoor wireless propagation in the Department's Mobile and Portable Radio Research Group (MPRG) has led to the development of the first commercially available indoor/microcellular Site Modeling Tool. Called SMT Plus, the software helps planners with indoor site selection, system bidding and preliminary wireless system design.

8. The EDN Access document (p.2), dated Aug. 1, 1996, teaches the following:
Software tool for indoor wireless system

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SMT Plus 1.0 is an interactive software tool for planning, simulating, and Installing indoor wireless systems. The program displays signal strength and interference contours on building blueprints for arbitrary base-station placements. Available for DOS, Windows, and a variety of Unix platforms, SMT Plus addresses all major wireless communication standards, including AMPS, IS-136, IS-95, and wireless LAN. \$2500. Virginia

Polytechnic Institute and State University, Blacksburg, VA.

9. Claims 1-5, 7-11, and 13-15 are rejected under 35 U.S.C. 102(b) as being

10. In regards to Claim 1, Site Planner 3.0 teaches the following limitations:

anticipated by SitePlanner™ 3.0 User's Manual.

1. A method for designing or deploying a communications network., comprising the steps of.

providing a computerized model which represents a physical environment in which a communications network is or will be installed, said computerized model providing a display of at least a portion of said physical environment; (See Site Planner 3.0, especially: pp.7-11)

p.7 teaches that "First, BDM is used to scan in, create, or import drawing blueprints of the building or campus under study."

identifying a plurality of system components which may be used in said physical environment, (See Site Planner 3.0, especially: pp.7-11, pp.79-89, pp.95-104)

p.8 teaches that "Predictor can be used by engineering staff to perform computer aided design and experimentation with a vast number of system configurations based on a collection of SitePlanner building drawings, ... and specific transmitters, channel lists, placement options, and antenna systems."

pp.79-89 teach the plurality of options available for adding base stations and editing their properties.

pp.95-104 teach the plurality of options available for adding and editing antenna systems.

identifying at least one component kit composed of at least two system components of said plurality of system components, (See Site Planner 3.0, especially: pp.97-99)

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pp.97-99, teach "Manipulating components in the Antenna System".

selecting either specific components from said plurality of system components or said at least one component kit for use in said computerized model; and (See Site Planner 3.0, especially: pp.7-11, pp.79-89, pp.95-104)

pp.79-89 teach the plurality of options available for adding base stations and editing their properties.

pp.95-104 teach the plurality of options available for adding and editing antenna systems and subsystems.

representing said selected specific components or said at least two system components of said at least one component kit in said display as part of a communications network.

(See Site Planner 3.0, especially: pp.7-11, pp.79-89, pp.95-104)

p.8 teaches that "Predictor can be used by engineering staff to perform computer aided design and experimentation with a vast number of system configurations based on a collection of SitePlanner bullding drawings, ... and specific transmitters, channel lists, placement options, and antenna systems."

- 11. In regards to Claim 2, Site Planner 3.0 teaches the following limitations:
 - 2. The method of claim 1 wherein said second identifying step includes the steps of

selecting said at least two system components from said plurality of system components identified in said first identifying step; and (See Site Planner 3.0, especially: pp.95-105)

Fig.5.12 (p.95) shows the editing of the components of an antenna system. Fig.5.15 shows the swapping of components in an antenna system. Fig.5.16 shows the connecting of a new component to an existing antenna system.

presenting said selected at least two system components as said at least one component kit in said display. (See Site Planner 3.0, especially: pp.95-105)

Fig.5.12 (p.95) shows the editing of the components of an antenna system.

12.In regards to Claim 3, Site Planner 3.0 teaches the following limitations:

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3. The method of claim 2 wherein more than one component kit is presented in said presenting step. (See Site Planner 3.0, especially: pp.95-105 and Fig.5.12)

p.95 says that "Any number of antennas, amplifiers, connectors, splitters, cables, and any other component from the bill of materials can be graphically positioned within the drawing database to form the antenna system for a given transmitter."

- 13. In regards to Claim 4, Site Planner 3.0 teaches the following limitations:
 - 4. The method of claim 2 wherein more than two system components are in said at least one component kit. (See Site Planner 3.0, especially: pp.95-105 and Fig.5.12)
 - p.95 says that "Any number of antennas, amplifiers, connectors, splitters, cables, and any other component from the bill of materials can be graphically positioned within the drawing database to form the antenna system for a given transmitter."
- 14. In regards to Claim 5, Site Planner 3.0 teaches the following limitations:
 - 5. The method of claim 1 further comprising the step of generating a bill of materials containing cost information for said selected specific components or said at least two system components of said at least one component kit utilized in said communications network.

 (See Site Planner 3.0, especially: pp.89-91 "Bill of Materials")

Fig.5.9, on p.91, has a field for "Cost(US\$)"

- 15. In regards to Claim 7, Site Planner 3.0 teaches the following limitations:
 - 7. The method of claim 1 wherein said system components have performance attributes associated with them, and further comprising the step of running prediction models using the computerized model and said performance attributes to predict performance characteristics of said communications network.

(See Site Planner 3.0, especially: pp.7-11 and pp.113-126)

- p.8 teaches that "Predictor can be used by engineering staff to perform computer aided design and experimentation with a vast number of system configurations based on a collection of SitePlanner building drawings, cost and coverage target parameters, and specific transmitters, channel lists, placement options, and antenna systems.
- p.123 teaches that "Coverage Prediction mode allows you to specify boundary regions where you would like to see a certain level of received

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signal strength, signal-to-interference ratio, or signal-to-noise ratio, and then it predicts and displays those boundaries as closed contours directly on the drawing".

- 16. In regards to Claim 8, Site Planner 3.0 teaches the following limitations:
 - 8. The method of claim 7 further comprising the steps of measuring performance data in said physical environment and presenting the measured performance data in said display.

 (See Site Planner 3.0, especially: pp.7-11 and pp.127-140)
 - p.9 teaches that "Once the pre-design phase of Predictor is carried out, and the customer approves the deployment of the wireless network, InFielder is then used to perform rapid field measurements ... InFielder modifies the database by writing (overlaying) field measurements upon the predictive contours produced by Predictor. Drawing files modified by InFielder contain an "I" in the drawing legend."
- 17. In regards to Claim 9, Site Planner 3.0 teaches the following limitations:
 - 9. The method of claim 7 further comprising the steps of measuring performance data in said physical environment and comparing results from said prediction models to said measured performance data.

 (See Site Planner 3.0, especially: pp.7-11 and pp.127-140)
 - p.9 teaches that "Once the pre-design phase of Predictor is carried out, and the customer approves the deployment of the wireless network, InFielder is then used to perform rapid field measurements ... InFielder modifies the database by writing (overlaying) field measurements upon the predictive contours produced by Predictor. Drawing files modified by InFielder contain an 'I' in the drawing legend."
- 18. In regards to Claim 10, Site Planner 3.0 teaches the following limitations:
 - 10. An apparatus for designing and deploying a communications network, comprising:
 - a means for providing
 - (I) a computerized model which represents a physical environment in which a communications network is or will be installed, said computerized model providing a display of at least a portion of said physical environment, and (See Site Planner 3.0, especially: pp.7-11)
 - p.7 teaches that "First, BDM is used to scan in, create, or import drawing blueprints of the building or campus under study."

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(II) performance attributes for a plurality of system components which may be used in said physical environment, (See Site Planner 3.0, especially: pp.83-84)

pp.83-84 teach a means for providing performance attributes to base stations.

means for identifying a plurality of system components which may be used in said physical environment; (See Site Planner 3.0, especially: pp.7-11, pp.79-89, pp.95-104)

p.8 teaches that "Predictor can be used by engineering staff to perform computer aided design and experimentation with a vast number of system configurations based on a collection of SitePlanner building drawings, ... and specific transmitters, channel lists, placement options, and antenna systems."

pp.79-89 teach the plurality of options available for adding base stations and editing their properties.

pp.95-104 teach the plurality of options available for adding and editing antenna systems.

means for identifying at least one component kit composed of at least two system components of said plurality of system components; (See Site Planner 3.0, especially: pp.97-99)

pp.97-99, teach "Manipulating components in the Antenna System".

means for selecting either specific components from said plurality of system components or said at least one component kit for use in said computerized model; and (See Site Planner 3.0, especially: pp.7-11, pp.79-89, pp.95-104)

pp.79-89 teach the plurality of options available for adding base stations and editing their properties.

pp.95-104 teach the plurality of options available for adding and editing antenna systems and subsystems.

means for representing said selected specific components or said at least two system components of said at least one component kit in said display as part of a communications network.

(See Site Planner 3.0, especially: pp.7-11, pp.79-89, pp.95-104)

p.8 teaches that "Predictor can be used by engineering staff to perform computer aided design and experimentation with a vast number of system

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configurations based on a collection of SitePlanner building drawings, ... and specific transmitters, channel lists, placement options, and antenna systems. Pp.78-89 and 95-104 teach the means for doing so."

19. In regards to Claim 11, Site Planner 3.0 teaches the following limitations:

11. The apparatus of claim 10 further comprising a means for generating a bill of materials containing cost information for said selected specific components utilized in said communications network.

(See Site Planner 3.0, especially: pp.89-91 *Bill of Materials*)

Fig.5.9, on p.91, has a field for "Cost(US\$)"

20. In regards to Claim 13, Site Planner 3.0 teaches the following limitations:

13. The apparatus of claim 10 further comprising means for associating performance attributes with said system components; and (See Site Planner 3.0, especially: pp.7-11 and pp.113-126)

p.8 teaches that "Predictor can be used by engineering staff to perform computer aided design and experimentation with a vast number of system configurations based on a collection of SitePlanner building drawings, cost and coverage target parameters, and specific transmitters, channel lists, placement options, and antenna systems.

means for running prediction models using the computerized model and said performance attributes to predict performance characteristics of said communications network.

(See Site Planner 3.0, especially: pp.7-11 and pp.113-126)

p.123 teaches that "Coverage Prediction mode allows you to specify boundary regions where you would like to see a certain level of received signal strength, signal-to-interference ratio, or signal-to-noise ratio, and then it predicts and displays those boundaries as closed contours directly on the drawing".

21. In regards to Claim 14, Site Planner 3.0 teaches the following limitations:

14. The apparatus of claim 13 further comprising a means for measuring performance data and presenting the measured performance data in said display.

(See Site Planner 3.0, especially: pp.7-11 and pp.127-140)

p.9 teaches that "Once the pre-design phase of Predictor is carried out, and the customer approves the deployment of the wireless network, InFielder is then used to perform rapid field measurements ... InFielder

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modifies the database by writing (overlaying) field measurements upon the predictive contours produced by Predictor. Drawing files modified by InFielder contain an 'I' in the drawing legend."

- 22. In regards to Claim 15, Site Planner 3.0 teaches the following limitations:
 - 15. The apparatus of claim 13 further comprising a means for comparing measured performance data with results from said prediction models. (See Site Planner 3.0, especially: pp.7-11 and pp.127-140)
 - p.9 teaches that "Once the pre-design phase of Predictor is carried out, and the customer approves the deployment of the wireless network, InFielder is then used to perform rapid field measurements ... InFielder modifies the database by writing (overlaying) field measurements upon the predictive contours produced by Predictor. Drawing files modified by InFielder contain an 'l' in the drawing legend."

Claim Rejections - 35 USC § 103

- 23. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
 - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 24. The prior art used for these rejections is as follows:
 - a. Rappaport, T., et al. <u>SitePlanner ™ 3.0 User's Manual.</u> Wireless Valley
 Communications. © 1998. (Referred to in this document as "SitePlanner 3.0").
 - b. Ahmed, Mansoor. "Use of Topographic Maps with Building Information to Determine Antenna Placement for Radio Detection and Tracking in Urban Environments". MPRG-TR-95-19. Nov. 1995. (Referred to in this document as "Ahmed").

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- 25. Claims 6 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over SitePlanner 3.0 in view of Ahmed.
- 26. In regards to Claim 6, Site Planner 3.0 does not expressly teach the following limitations:
 - 6. The method of claim 1 wherein said display is three dimensional.

Ahmed, on the other hand, does expressly teach the use of a 3D display in propagation prediction using ray tracing. (See p.7, Figure 2.1 – Item "Trace Rays in 3D", and p.92, Figure 7.2, "Rays traced for receiver 40.)

It would have been obvious to one of ordinary skill in the art to modify the teachings of SitePlanner 3.0 with those of Ahmed, because doing so enables the prediction of signal strength and power delay profile (see p.6, last paragraph, and p.7, Fig.2.1).

- 27.In regards to Claim 12, Site Planner 3.0 does not expressly teach the following limitations:
 - 12. The apparatus of claim 10 wherein said display is three dimensional.

Ahmed, on the other hand, does expressly teach the use of a 3D display in propagation prediction using ray tracing. (See p.7, Figure 2.1 – Item "Trace Rays in 3D", and p.92, Figure 7.2, "Rays traced for receiver 40.)

It would have been obvious to one of ordinary skill in the art to modify the teachings of SitePlanner 3.0 with those of Ahmed, because doing so enables the prediction of signal strength and power delay profile (see p.6, last paragraph, and p.7, Fig.2.1).

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Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ayal I. Sharon whose telephone number is (703) 306-0297. The examiner can normally be reached on Monday through Thursday, and the first Friday of a biweek, 8:30 am – 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Teska can be reached on (703) 305-9704. Any response to this office action should be mailed to:

Director of Patents and Trademarks Washington, DC 20231

Hand-delivered responses should be brought to the following office:

4th floor receptionist's office Crystal Park 2 2121 Crystal Drive Arlington, VA

The fax phone number is: (703) 872-9306

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist, whose telephone number is: (703) 305-3900.

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REQUIREMENT FOR INFORMATION – 37 C.F.R. § 1.105

- 1. Examiner has located several documents that raise issues of inventorship, assignment rights, and on sale activity of the invention disclosed in the instant application. Examiner has also found a discrepancy regarding one of the references provided by the Applicants in an IDS (paper #3). The documents that raise these issues are:
 - a. "SMT Plus: Site Modeling Tool. A Software Tool for Planning Indoor Wireless Systems." © 2001. Printed from http://www.mprq.org/research/smt/smt.shtml on 3/5/04. (Referred to in this document as "SMT Plus").
 - b. "MPRG Industrial Affiliate Program." 2001. Printed from http://www.mprq.org/partnerships/affiliate.shtml on 3/5/04.
 - c. "Wireless Research Leads to Indoor Planning Tool." <u>EE Connection</u>, Feb. 1997. Printed from http://www.ecpe.vt.edu/ecenews/feb97/smt.html on 3/5/04. (Referred to in this document as "EE Connection").
 - d. "VTIP Disclosure No.: 96-013." Virginia Tech Intellectual Properties, Inc. © 1997-2001. Printed from http://www.vtip.org/licensing/disclosures/96-013.htm on 3/5/04. (Referred to in this document as "VTIP Disclosure").
 - e. "Communication Products Special Section." <u>EDN Access</u>, Aug. 1, 1996.

 Printed from http://www.e-
 http://www.e-
 http://www.e-
 insite.net/ednmag/archives/1996/080196/16df1.htm on 3/5/04. (Referred to in this document as "EDN Access").

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- f. Panjwani et al., "Interactive Computation of Coverage Regions for Wireless Communication in Multifloored Indoor Environments." <u>IEEE</u>

 <u>Journal of Selected Areas in Communication.</u> April 1996. pp.420-430.

 (Referred to in this document as "Panjwani").
- g. Skidmore et al. "Interactive Coverage Region and System Design Simulation for Wireless Communication Systems in Multifloored Indoor Environments: SMT Plus." 5th Int'l Conference on Universal Personal Communications, Sept.29 – Oct.2, 1996. pp.646-650, vol.2. (Referred to in this document as "Skidmore").
- h. Skidmore et al. "A Comprehensive In-Building and Microcellular Wireless Communication System Design Tool." The Bradley Dept. of Electrical Engineering, Virginia Tech Univ. MPRG-TR-97-13. June 1997. (Referred to in this document as "Skidmore_2").
- i. "Scholarly Communications Project". Regarding Master's Thesis of Roger R. Skidmore. Printed from http://scholar.lib.vt.edu/theses/delayed/etd-61097-104157/etd-title.html on 3/5/04. (Referred to in this document as "Scholary Comm. Project").
- 2. The SMT Plus, Panjwani, and Skidmore documents raise questions of inventorship.
 - a. The first page of the SMT Plus document contains the following quotation:

SMT Plus was developed at MPRG in the early 1990s from years of indoor/microcell propagation research at Virginia Tech. It is an early research predecessor to SitePlanner™ Tool Suite, the powerful commercial indoor/microcellular prediction & measurement system

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developed by Wireless Valley Communications, Inc. Please visit the Wireless Valley Communications, Inc. website to learn about the full capabilities of this powerful indoor/microcellular engineering and system management tool suite.

- b. Based on the information in Skidmore and Skidmore_2, examiner finds that the SMT Plus software reads on the claimed invention (See the accompanying Office Action for more details).
- c. In the "Developers" section of the SMT Plus document, a total of five faculty members and graduate students are listed as having "contributed to SMT's success." They are: Dr. Theodore Rappaport, Dr. A. Lynn Abbott, Nitin Bhat, Manish Panjwani, and Roger Skidmore. Out of these five individuals, only Dr. Rappaport and Mr. Skidmore are listed as inventors in the instant application.
- d. Moreover, in the "Publications" section of the SMT Plus document, the Panjwani and Skidmore publications are listed. Both the Panjwani and Skidmore publications list Dr. Abbott as a co-author, yet Dr. Abbott is not listed as a co-inventor in the instant application.
- e. The Panjwani publication also lists Mr. Panjwani as a co-author, yet he is not listed as a co-inventor in the instant application.
- f. Clarification of these issues is required.
- The SMT Plus, VTIP Disclosure, Panjwani, and Skidmore documents raise questions of assignment rights.
 - a. In the "Acknowledgement" section of the SMT Plus document, the following groups are thanked for their "contributions to the SMT project":

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- I. MPRG Industrial Affiliate Members
- II. The National Science Foundation
- III. The Office of National Drug Control Policy
- IV. IBM
- V. Grayson Electronics
- b. Moreover, the link to "MPRG Industrial Affiliate Members" (Item 3(a)(I) above) in the "Acknowledgement" section of the SMT Plus document leads to the "MPRG Industrial Affiliate Program" document, which lists the following companies as having funded the MPRG in exchange for "provid[ing] an opportunity for industry to profit from MPRG's research, facilities, and personnel":
 - Analog Devices
 - II. Army Research Office
 - III. General Dynamics Decision Systems
 - IV. Huawei Technologies Company
 - V. Lucent Technologies
 - VI. Motorola Inc.
 - VII. Qualcomm Incorporated
 - VIII. Samsung
 - IX. SBC Technology Resources, Inc.
 - X. DRS Technologies
 - XI. Texas Instruments

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c. The Panjwani document states (at the bottom of p.1, col.1) that "This work was supported by AT&T Global Information Systems."

- d. The Skidmore document thanks the following organizations for "their support of the SMT Plus project":
 - I. The National Science Foundation
 - II. The Office of National Drug Control Policy
 - III. The MPRG Industrial Affiliates
- e. Both the Skidmore document, and the VTIP Disclosure document state that AutoDesk's AutoCAD is used to implement the claimed invention.
- f. None of the above listed companies or U.S. Government agencies are cited in the instant application as having rights to the invention.
- g. Clarification of these issues is required.
- 4. The EE Connection and EDN Access documents raise questions of public use and on sale activity prior to the on sale bar date.
 - a. The EE Connection document teaches the following:

Research on indoor wireless propagation in the Department's Mobile and Portable Radio Research Group (MPRG) has led to the development of the first commercially available indoor/microcellular Site Modeling Tool. Called SMT Plus, the software helps planners with indoor site selection, system bidding and preliminary wireless system design.

- b. The date of the EE Connection document, February 1997, is before the on-sale bar date of the claimed invention.
- c. The EDN Access document (p.2) teaches the following:

Software tool for indoor wireless system

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SMT Plus 1.0 is an interactive software tool for planning, simulating, and installing indoor wireless systems. The program displays signal strength and interference contours on building blueprints for arbitrary base-station placements. Available for DOS, Windows, and a variety of Unix platforms, SMT Plus addresses all major wireless communication standards, including AMPS, IS-136, IS-95, and wireless LAN. \$2500. Virginia Polytechnic Institute and State University, Blacksburg, VA.

- d. The date of the EDN Access document, August 1, 1996, is before the onsale bar date of the claimed invention.
- e. Clarification of these issues is required.
- The Scholarly Comm. Project document raises questions regarding the availability of one of the documents submitted by the Applicants in an IDS (paper #3).
 - a. The submitted document in question is Skidmore_2.
 - b. Applicants declare in an IDS (paper #3, p.13, Item #24) that Skidmore_2
 was "unpublished by Virginia Tech for 2 years after submission."
 - c. The Scholarly Comm. Project teaches (p.1, "Availability" section) the following:

Release the entire work for Virginia Tech access only. After one year release worldwide only with written permission of the student and the advisory committee chair.

d. The Scholarly Comm. Project teaches (p.2) that:

At the author's request, all materials (PDF files, images, etc.) associated with this ETD are accessible from the Virginia Tech network only.

The author grants Virginia Tech or its agents the right to archive and display their thesis or dissertation in whole or in part in the

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University Libraries in all forms of media, now or hereafter known. The author retains all proprietary rights, such as patent rights.

- e. The Scholarly Comm. Project contradicts Applicants' statement in the IDS that Skidmore_2 was "unpublished by Virginia Tech for 2 years." It appears that the reference was archived and displayed in the Virginia Tech University Libraries immediately after the defense (June 9, 1997).
- f. Clarification of these issues is required.
- 6. Applicant and the assignee of this application are required under 37 CFR 1.105 to provide the following information that the examiner has determined is reasonably necessary to the examination of this application:
 - Information clarifying the inventorship issues of SMT Plus.
 - Information clarifying the assignment issues of SMT Plus.
 - Information clarifying the on-sale activity issues of SMT Plus.
 - Information clarifying the disclosure history of the Skidmore_2 reference.

 Applicant is reminded that failure to fully reply to this requirement for information will result in a holding of abandonment.
- 7. The fee and certification requirements of 37 CFR 1.97 are waived for those documents submitted in reply to this requirement. This waiver extends only to those documents within the scope of this requirement under 37 CFR 1.105 that are included in the applicant's first complete communication responding to this requirement. Any supplemental replies subsequent to the first communication responding to this requirement and any information disclosures

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beyond the scope of this requirement under 37 CFR 1.105 are subject to the fee and certification requirements of 37 CFR 1.97.

- 8. The applicant is reminded that the reply to this requirement must be made with candor and good faith under 37 CFR 1.56. Where the applicant does not have or cannot readily obtain an item of required information, a statement that the item is unknown or cannot be readily obtained will be accepted as a complete reply to the requirement for that item.
- 9. This requirement is an attachment of the enclosed Office action. A complete reply to the enclosed Office action must include a complete reply to this requirement. The time period for reply to this requirement coincides with the time period for reply to the enclosed Office action.
- 10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ayal I. Sharon whose telephone number is (703) 306-0297. The examiner can normally be reached on Monday through Thursday, and the first Friday of a biweek, 8:30 am 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Teska can be reached on (703) 305-9704. Any response to this office action should be mailed to:

Director of Patents and Trademarks Washington, DC 20231

Hand-delivered responses should be brought to the following office:

4th floor receptionist's office Crystal Park 2 2121 Crystal Drive

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Page 10

Arlington, VA

The fax phone number is: (703) 872-9306

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist, whose telephone number is: (703) 305-3900.

Ayal I. Sharon

Art Unit 2123

August 11, 2004

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